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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,718	09/22/2000	Hyun Chang Lee	8733.270	9395

30827 7590 03/15/2004

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EXAMINER

ALPHONSE, FRITZ

ART UNIT	PAPER NUMBER
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2675

11

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/667,718

Applicant(s)

LEE ET AL.

Examiner

Fritz Alphonse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8-9, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Bird (U.S. Pat. No. 5,852,425).

As to claims 1, 2, 4, 5, 15-17 Bird (fig. 1) shows a method of driving a liquid crystal display device having a plurality of liquid crystal cells disposed in a matrix of rows and columns (col. 1, lines 6-19), the method comprising: scanning the rows of liquid crystal cells in the liquid crystal display device sequentially (col. 4, lines 53-58); and subsequently, resetting each liquid crystal cell of the liquid crystal display device simultaneously (col. 7, lines 62; col. 8, lines 3-5; since the reset voltage V_e (zero voltage reset) is applied to common electrode 15, all pixels are reset simultaneously).

As to claims 3 and 8, Bird (fig. 6 a) shows a method, wherein resetting each liquid crystal cell of the liquid crystal display device simultaneously comprises simultaneously applying a reset voltage to a gate electrode line of each liquid crystal cell. (note that at time t_r V_{ghigh} turns on at the same time as reset voltage; V_e (low = 0 volt) during reset period t_r).

As to claims 6, 9, Bird (figs. 1 and 6a) teaches about voltage selecting means for selecting, in response to an input control signal, a normal common voltage (V_e high) to be applied to a common electrode of the liquid crystal display device in an interval when

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a data voltage is charged and maintained in all liquid crystal cells of the liquid crystal display, and for selecting, in response to the input control signal, a reset voltage V_e (zero volt) less than the normal common voltage to be applied to the common electrode in a reset interval (reset voltage is V_e (zero volt), then the common voltage V_e high applied at the same time as the data charging time, i.e. $V_e \text{ high} > V_e \text{ reset}$; see fig. 6a).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bird in view of Yanagi (U.S. Pat. No. 6,310,616).

As to claim 10 and 11, Bird (fig. 1) teaches about a reset circuit for a liquid crystal display device.

However, Bird does not disclose a voltage amplifier for amplifying an input control signal to a common electrode of the liquid crystal display device and, wherein the voltage amplifier outputs a normal common electrode voltage in an interval when a data voltage is charged and maintained in the liquid crystal cells, and outputs a reset voltage less than the normal common electrode voltage in the reset interval.

However, in the same field of endeavor, Yanagi (Prior Art figs. 48, 49) show a voltage amplifier for amplifying an input control signal to a common electrode driver (500; see figure 48) of the liquid crystal display device. See column 1, lines 50-67.

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Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to improve upon the drive circuit for a display device, as disclosed by Yanagi. Doing so would amplify the input control signal line and increase the brightness of the display.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12, 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe (U.S. Pat. No. 6,151,016) in view of Matsushima (U.S. Pat. No. 6,396,468).

As to claims 12, 13, 14, Kanabe (fig. 19) shows a reset circuit for a liquid crystal display device, comprises OR-Gates (103), reset (erase) gate lines 25 (fig. 2); see col. 17, lines 48-55 and col. 18, lines 1-6. Kanabe teaches level shifters (102) outputting to OR-Gates 103 (claim calls for output of OR-Gates input to level shifters). Kanabe does not explicitly disclose level shifters connected individually to outputs of the logical OR gates.

However, in the same field of endeavor, Matsushima teaches logic gates (NAND gates 1024 (fig. 6) of MUX 3b (fig. 4)) having input to level shifter 3c (fig. 4), see also col. 11, lines 67 to col. 12, line 2.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to improve upon the erasing device for LCD, as disclosed by Kanabe. Doing so would provide an erasing device for a LCD image which can erase

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an afterimage quickly while suppressing the deterioration of the liquid crystal, and to provide a LCD device including such an erasing device.

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse whose telephone number is (703) 308-8534.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)


Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

F. Alphonse

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March 8, 2004


STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600